

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Previously Presented) A system for location recognition using IC tags, wherein an interrogator makes a first communication with multiple IC tags existing in a communication area A by radio, and at the same time, one of said multiple IC tags makes a second communication with other IC tags existing in a communication area B (<A) by probe signals, the one of said multiple IC tags comprising:

a first responder that responds with own information Xa to the interrogator;

a transmitter that sends said probe signals to the other IC tags when own information Xa is specified by the interrogator;

a receiver that receives a probe signal sent out by one IC tag of the other IC tags whose information Xb is specified by the interrogator;

a storage that stores information Xb of the one IC tag of the other IC tags specified as a source IC tag by the interrogator in a memory when a reception strength of said probe signal is more than a predetermined level; and

a second responder that responds with the information Xb of the source IC tag stored in the memory to the interrogator in response to a readout command,

wherein relative positions of said multiple IC tags are recognized from the information Xa and the information Xb collected via the interrogator, and

wherein the storage stores the information Xb of the one IC tag of the other IC tags until the readout command is received, the readout command specifying the one of said multiple IC tags corresponding to information Xa.

2. (Previously Presented) The system for location recognition using IC tags as described in claim 1, wherein all possible combinations of the information Xa and information Xb are obtained, and any of the combinations having one side of information in common are joined so that locations and arrangement order of said multiple IC tags are specified.
  
3. (Previously Presented) The system for location recognition using IC tags as described in claim 1, wherein one of a radio, magnetism, sound, and light wave is used for the probe signals.
  
4. (Previously Presented) The system for location recognition using IC tags as described in claim 1, wherein a communication range of the communication area B is adjusted at different lengths depending on sizes and arrangement of items to which said multiple IC tags are affixed.
  
5. (Previously Presented) The system for location recognition using IC tags as described in claim 1, wherein responses of said first responder and said second responder are sent to said multiple IC tags existing in the communication area A while the interrogator specifies response requirements to avoid collisions.
  
6. (Previously Presented) The system for location recognition using IC tags as described in claim 1, wherein the probe signals are transmitted to said multiple IC tags existing in the communication area A while the interrogator specifies response requirements to avoid collisions.

7. (Currently Amended) A method for location recognition using IC tags, wherein an interrogator makes a first communication with multiple IC tags existing in a communication area A by radio, and at the same time, one of the multiple IC tags makes a second communication with other IC tags existing in a communication area B (<A) by probe signals, the method comprising:

having the one of the multiple IC tags respond with own information Xa to the interrogator;

having the one of the multiple IC tags transmit the probe signals to the other IC tags when own information Xa is specified by the interrogator;

receiving, by the one of the multiple IC tags, probe signals sent by one IC tag of the other IC tags whose information Xb is specified by the interrogator;

storing, by the one of the multiple IC tags, information Xb of the one IC tag of the other IC tags specified as a source IC tag by the interrogator in a memory when a reception strength of a probe signal is more than a predetermined level; and

responding, by the one of the multiple IC tags, with information Xb of the source IC tag to the interrogator in response to a readout command,

wherein relative positions of the multiple IC tags are recognized from the information Xa and the information Xb collected via the interrogator, and

wherein the information Xb of the one IC tag of the other IC tags is stored until the readout command is received, the readout command specifying the one of the multiple IC tags corresponding to information Xa.

8. (Previously Presented) The system for location recognition using IC tags as described in claim 1,

wherein the probe signals are omnidirectional propagation media, and  
wherein the probe signals become attenuated progressively with distance.

9. (Previously Presented) The system for location recognition using IC tags as described  
in claim 3,

wherein the probe signals are omnidirectional propagation media, and  
wherein the probe signals become attenuated progressively with distance.